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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/669,248

Applicant(s)COFFEY, JOSEPH
CHRISTOPHER**Examiner**

JOSHUA JOO

Art Unit

2454

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,7,10-12,18-21,24,25 and 27-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,10-12,18-21,24,25 and 27-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

1. This Office action is in response to communication dated 08/05/2008.
Claims 1-2, 6-7, 10-12, 18-21, 24-25, 27-45 are pending for examination.

Response to Arguments

2. Applicant's arguments filed 08/05/2008 have been fully considered but they are not persuasive.
Applicant argued that:

3. (1) Overs monitors for the normal link pulse or multi-level tier 3 pulse signals individually to detect different data transmission rates at an RJ-45 interface but does not indicate use of a fast link pulse. There exists no motivation to combine these two references [Cromer and Overs] since each reference independently describes a system which can communicate at multiple data rates.

4. In response, Examiner respectfully disagrees that Overs does not indicate use of a fast link pulse. Overs teaches,

"There are three receiving processes active in the RX port. One is (by way of a 10BASE-T receiver) the search for fast link pulses (FLPs) (col. 2, lines 42-45)"

"The receiver 11 can detect normal link pulses and provide a corresponding signal denoted '10M LINK' to an autonegotiation state machine 13. It can also detect fast link pulses and provide a corresponding signal denoted 'FLP DETECT' to the state machine 13". (col. 5, lines 1-5)

5. As shown above, Overs clearly teaches of using and detecting a fast link pulse. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute Cromer's use of fast link pulses with Over's use of fast link pulses, normal pulses, and multi tier 3 pulses to obtain a predictable result of determining a data rate for communication. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings because Overs' teachings would provide an improvement to Cromer's teachings by providing rate

determination with devices that support multiple modes of operation while allowing accurate identification of signals (Abstract).

6. (2) The combination of Cromer with Manzardo is improper, in that there exists no apparent motivation to combine the two references at the time of the invention. No indication to combine these references is provided in either of Cromer or Manzardo. The description of a motivation to combine these references is drawn directly from the present application itself.

7. In response, Examiner respectfully disagrees that the combination of Cromer with Manzardo is improper.

MPEP 2141(III) states,

If the search of the prior art and the resolution of the Graham factual inquiries reveal that an obviousness rejection may be made using the familiar teaching-suggestion-motivation (TSM) rationale, then such a rejection should be made. Although the Supreme Court in KSR cautioned against an overly rigid application of TSM, it also recognized that TSM was one of a number of valid rationales that could be used to determine obviousness... The Court in KSR identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in Graham. KSR, 550 U.S. at ___, 82 USPQ2d at 1395-97.

8. According to the MPEP, KSR forecloses the argument that a specific TSM is required.

According to MPEP 2141 (III), a rationale for a proposed combination is not limited to TSM, and different rationales including TSM may be used to support a conclusion of obviousness. Therefore, the references do not have to provide an indication of the motivation. The rationale used to support the current rejection includes combining prior art elements according to known methods to yield predictable results and use of known technique to improve similar devices (methods, or products) in the same way.

Examiner also respectfully disagrees that the motivation to combine the references is drawn from the present application. The advantages of implementing optical transmission, which includes high bandwidth and improved quality, are well known to one of ordinary skill in the art. For instance, the following references all teach of optics providing increased bandwidth and improved signal quality prior

to the filing of the present application. See US Patents #6,466,711 #6,556,056 #6,687,437 #7,158,706, and US Publications #2006/0018591, #2003/0156810, #2002/0033984.

9. (3) The term “approximately” is not indefinite because the scope of claim 10 is readily ascertainable. See MPEP 2173.05(b).

10. In response, Examiner respectfully disagrees that “approximately” is a definite term. Applicant points to MPEP 2173.05(b), which states:

When a term of degree is presented in a claim, first a determination is to be made as to whether the specification provides some standard for measuring that degree. If it does not, a determination is made as to whether one of ordinary skill in the art, in view of the prior art and the status of the art, would be nevertheless reasonably apprised of the scope of the invention.

11. Firstly, the term “approximately” is not a definite term since “approximately” is defined as “almost correct or exact” or “located close”. Secondly, Applicant’s specification does not provide a standard for measuring a time that is approximately 20 seconds, and one of ordinary skill in the art would not reasonably be apprised of the exact scope of how a close a time is needed to be 20 seconds to be considered as “approximately 20 seconds”.

Drawings

12. The drawings are objected to because: fig. 1 should be designated as prior art because only that which is old is illustrated. See MPEP § 608.02(g). Applicant indicated in the Remarks dated 08/05/2008 that a replacement drawing sheet for figure 1 was provided. However, upon review of the submissions dated 08/05/2008, there does not appear to be a replacement drawing sheet. Furthermore, the EFW Acknowledgement receipt indicates that 16 pages of Remarks/Amendments were received, wherein the claims (8 pages) and Argument/Remarks (8 pages) add up to the received 16 pages. Also, the first page of the Remarks does not indicate that a replacement drawing is submitted.

13. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claims 1, 6, 11, 19, 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

14. Claims 24-25 are objected to because of the following informalities:
- i) Regarding claim 24, "the first pair of puns" should be changed to "the first pair of pins".
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- i) Regarding claim 10, the term “approximately” is a relative term, which renders the claim indefinite. It is unclear as to the exact waiting period of “the autonegotiation period”.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 1-2, 6-7, 11-12, 19-21, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cromer et al. US Publication #2004/0223462 (Cromer hereinafter), in view of Overs et al. US Patent #6,600,755 (Overs hereinafter).

19. As per claim 1, Cromer teaches substantially the invention as claimed including a method of selecting a data signal source from amongst a plurality of potential sources, the method comprising:

- (a) selecting a source from amongst the plurality of potential sources (Paragraphs 0025; 0032.

Determine a logical-to-physical pin assignments.);

- (b) monitoring the source selected in step (a) for an indication of communication speed (Paragraph 0028. Auto-negotiation determines data rate. Paragraphs 0005; 0030. FLP signals during auto-negotiation Paragraph 0032. Determine if auto-negotiation is successful.), wherein monitoring the source includes monitoring for a fast link pulse (Paragraphs 0005; 0030. Fast link pulse. claim 3. Select rates of 10, 100, and 1000 Mbps);

- (c) returning to step (a) if no indication of communication speed is observed (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route ping assignments.); and

(d) maintaining selection of the source of step (a) if an indication of communication speed is observed (Paragraph 0032. If auto-negotiation is successful, network link is established using physical signal wires. Paragraph 0028. Auto-negotiation determines data rate.).

20. Cromer does not specifically teach of monitoring for a normal link pulse and a multi-level tier 3 pulse.

21. Overs teaches an invention for auto-negotiation comprising of detecting normal link pulse, a multi tier 3 pulse, and a fast link pulse (col. 2, lines 40-48; col. 5, lines 1-12).

22. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings by substituting Cromer's use of fast link pulses with Over's use of fast link pulses, normal pulses, and multi tier 3 pulses, which would obtain a predictable result of determining a data rate for communication. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings because Overs' teachings would provide an improvement to Cromer's teachings by providing rate determination with devices that support multiple modes of operation and allowing accurate identification of signals (col. 4, lines 26-33; Abstract).

23. As per claim 6, Cromer teaches substantially the invention as claimed including a method of selecting a data signal source from amongst a plurality of potential sources, the method comprising:

(a) selecting a source from amongst the plurality of potential sources (Paragraphs 0025; 0032. Determine and select physical pins.);

(b) monitoring the source selected in step (a) for an indication of an ensuing autonegotiation period (Paragraph 0031. Initiate subsequent auto-negotiation and wait for response.), wherein monitoring the source includes monitoring for a fast link pulse (Paragraphs 0005; 0030. Fast link pulse. claim 3. Select rates of 10, 100, and 1000 Mbps);

(c) waiting for expiration of the ensuing autonegotiation period (Paragraphs 0031-0032. Timeout or auto-negotiation may be successful);

(d) returning to step (a) if after expiration of the autonegotiation period, no indication of communication speed is observed (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route ping assignments. Paragraph 0028. Auto-negotiation determines data rate.); and

(e) maintaining selection of the source previously selected in step (a) if after expiration of the autonegotiation period, an indication of communication speed is observed (Paragraph 0032. If auto-negotiation is successful, network link is established using physical signal wires. Paragraph 0028. Auto-negotiation determines data rate.).

24. Cromer does not specifically teach of monitoring for a normal link pulse and a multi-level tier 3 pulse.

25. Overs teaches an invention for auto-negotiation comprising of detecting normal link pulse, a multi tier 3 pulse, and a fast link pulse (col. 2, lines 40-48; col. 5, lines 1-12).

26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings by substituting Cromer's use of fast link pulses with Over's use of fast link pulses, normal pulses, and multi tier 3 pulses, which would obtain a predictable result of determining a data rate for communication. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings because Overs' teachings would provide an improvement to Cromer's teachings by providing rate determination with devices that support multiple modes of operation and allowing accurate identification of signals (col. 4, lines 26-33; Abstract).

27. As per claim 11, Cromer teaches substantially the invention as claimed including a method of selecting a data signal source from amongst a plurality of potential sources, the method comprising:

(a) selecting a source from amongst the plurality of potential sources (Paragraphs 0025; 0032. Determine a logical-to-physical pin assignments.);

(b) monitoring the source selected in step (a) for an indication of communication speed or an ensuing autonegotiation period (Paragraph 0031. Initiate subsequent auto-negotiation and wait for response. Paragraph 0028. Auto-negotiation determines data rate.), wherein monitoring the source includes monitoring for a fast link pulse (Paragraphs 0005; 0030. Fast link pulse. claim 3. Select rates of 10, 100, and 1000 Mbps);

(c) returning to step (a) if no indication of communication speed or an ensuing autonegotiation period is observed (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route pin assignments.);

(d) maintaining the selection of step (a), if an indication of communication speed is observed (Paragraph 0028. Auto-negotiation determines data rate. Paragraphs 0005; 0030. FLP signals during auto-negotiation.);

(e) waiting for expiration of the ensuing autonegotiation period, if an indication of an ensuing autonegotiation period is observed (Paragraph 0031. Wait for end of auto-negotiation process.);

(f) returning to step (a) if after expiration of the autonegotiation period, no indication of communication speed is observed (Paragraph 0025. Reconfigure if wires are determined to be non-functional.); and

(g) maintaining selection of the source previously selected in step (a) if after expiration of the autonegotiation period, an indication of communication speed is observed (Paragraph 0032. If auto-negotiation is successful, network link is established using physical signal wires. Paragraph 0025. Communicate using functional wires.).

28. Cromer does not specifically teach of monitoring for a normal link pulse and a multi-level tier 3 pulse.

29. Overs teaches an invention for auto-negotiation comprising of detecting normal link pulse, a multi tier 3 pulse, and a fast link pulse (col. 2, lines 40-48; col. 5, lines 1-12).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings by substituting Cromer's use of fast link pulses with Over's use of fast link pulses, normal pulses, and multi tier 3 pulses, which would obtain a predictable result of determining a data rate for communication. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings because Overs' teachings would provide an improvement to Cromer's teachings by providing rate determination with devices that support multiple modes of operation and allowing accurate identification of signals (col. 4, lines 26-33; Abstract).

31. As per claim 19, Cromer teaches the invention as claimed including a method for a media converter to identify which of two pairs of pins on a data jack is carrying a data signal sent from a network device, wherein the media converter includes a physical interface having an input port into which the data signal from the network device is to be supplied, and wherein the media converter further includes a switch interposed between the data jack and the physical interface, the method comprising:

using the switch to alternately couple the input port on the physical interface between a first pair of pins on the data jack and a second pair of pins on the data jack (Paragraph 0025; 0032. Re-route to set of wires. Re-route pin assignments. Paragraph 0022. Physical layer. Encoding/modulation. Ports are inherent to receive and transmit signals to the wires.);

monitoring a pair of pins coupled to the input port of the physical interface for an indication of the speed at which the network device will communicate, the pair of pins corresponding to at least one of the first pair of pins and the second pair of pins (Paragraph 0032. Determine if auto-negotiation is successful. Paragraph 0028. Auto-negotiation determines data rate.), wherein monitoring the source

includes monitoring for a fast link pulse (Paragraphs 0005; 0030. Fast link pulse. claim 3. Select rates of 10, 100, and 1000 Mbps);;

upon determining the communication speed, ceasing to alternately couple the physical interface between the first pair of pins on the data jack and the second pair of pins on the data jack (Paragraph 0032. If auto-negotiation is successful, use physical signals wires to establish link.).

32. Cromer does not specifically teach of monitoring for a normal link pulse and a multi-level tier 3 pulse.

33. Overs teaches an invention for auto-negotiation comprising of detecting normal link pulse, a multi tier 3 pulse, and a fast link pulse (col. 2, lines 40-48; col. 5, lines 1-12).

34. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings by substituting Cromer's use of fast link pulses with Over's use of fast link pulses, normal pulses, and multi tier 3 pulses, which would obtain a predictable result of determining a data rate for communication. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings because Overs' teachings would provide an improvement to Cromer's teachings by providing rate determination with devices that support multiple modes of operation and allowing accurate identification of signals (col. 4, lines 26-33; Abstract).

35. As per claim 2, Cromer teaches the method of claim 1, further comprising: returning to step (a), selecting a second source from amongst the plurality of potential sources, upon absence of a data signal from the source previously selected in step (a) (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route ping assignments.).

36. As per claim 7, Cromer teaches the method of claim 6, further comprising: returning to step (a), selecting a source from amongst the plurality of potential sources, upon absence of a data signal from the

source previously selected in step (a) (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route ping assignments.).

37. As per claim 12, Cromer teaches the method of claim 11, further comprising the following step to be carried out after either steps (d) or (g): returning to step (a) upon absence of a data signal from the source (Paragraph 0032. If time out is detected, i.e. unsuccessful auto-negotiation, re-route ping assignments.).

38. As per claim 20, Cromer teaches the method of claim 19, wherein the data jack is an RJ-45 data jack (Paragraph 0024; fig. 3. RJ45 140.).

39. As per claim 21, Cromer teaches the method of claim 19, wherein monitoring the pair of pins coupled to the input port of the physical interface for an indication of the speed at which the network device will communicate comprises monitoring the pair of pins for an idle signal upon the pair of pins (Paragraphs 0005; 0030. Auto-negotiation comprises Fast link pulse. Paragraph 0033. FLP handshake.).

40. As per claim 24, Cromer teaches the method of claim 19, further comprising:
monitoring the pair of pins coupled to the input port of the physical interface for an indication of an ensuing autonegotiation period (Paragraph 0031. Initiate subsequent auto-negotiation and wait for response.);

waiting for expiration of the ensuing autonegotiation period, if an indication of an ensuing autonegotiation period is observed (Paragraph 0031. Wait for end of auto-negotiation process.);

after expiration of the ensuing autonegotiation period, monitoring a pair of pins coupled to the input port of the physical interface for an indication of the speed at which the network device will

communicate, the pair of pins corresponding to at least one of the first pair of pins and the second pair pins (Paragraph 0032. Determine if auto-negotiation is successful. Paragraph 0028. Auto-negotiation determines data rate.); and

upon determining the communication speed, ceasing to alternately couple the physical interface between the first pair of pins on the data jack and the second pair of pins on the data jack (Paragraph 0032. If auto-negotiation is successful, use physical signals wires to establish link.).

41. As per claim 25, Cromer teaches the method of claim 24, wherein monitoring the pair of pins coupled to the input port of the physical interface for an indication of an ensuing autonegotiation period comprises monitoring the pair of pins for an idle signal carried upon the pair of pins (Paragraphs 0005; 0030. Auto-negotiation comprises Fast link pulse. Paragraph 0033. FLP handshake.).

42. Claims 10 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cromer and Overs, in view of Pickell, US Publication #2004/0153701 (Pickell hereinafter).

43. As per claims 10 and 18, Cromer teaches of a timeout period in an auto-negotiation process (Paragraph 0031). Cromer does not explicitly teach that the waiting for the expiration of the autonegotiation period comprises waiting approximately 20 seconds.

44. Pickell teaches a system for establishing communication links, wherein a timeout period such as 15 seconds is set for a communication link switch (Paragraph 0044).

45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to a timeout period of approximately 20 seconds, which would provide a timeout period to determine whether wires are operable for communication.

46. Claims 27-35, 37-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cromer, in view of Manzardo, US Patent #6,127,953 (Manzardo hereinafter).

47. As per claim 27, Cromer teaches substantially the invention as claimed including a media converter comprising:

a switch having a first end and a second end, the first end capable of coupling to any of a plurality of potential sources of a data signal (Paragraph 0025; 0033. Wires.), the second end coupled to an input port of a physical interface that converts the data signal from a signal that propagates along a first medium to a signal that propagates along a second medium (fig. 1; paragraph 0017. device 104 implemented between devices 102, 106. Medium 103 is one medium. Paragraph 0022. Physical layer.

Encoding/modulation. Ports are inherent to receive and transmit signals to the wires.);

a logic device coupled to the physical interface (Paragraph 0022; fig. 2-3. Processor connected to unit. Physical layer implemented in NIC and MIFU.);

wherein the logic device is arranged to cause the switch to iteratively couple a first end of the switch to each of the plurality of potential data sources on a one-by-one basis, until instructed to cease such iterative coupling by the logic device (Paragraphs 0025; 0032. Produce correspondence between pins. Re-route to set of wires. Re-route pin assignments.);

receive a signal from the physical interface, the signal communicating a data rate at which the data signal will be communicated (Paragraph 0032. Detect success of auto-negotiation.); and

upon reception of the signal communicating the data rate at which the data signal will be communicated, instruct the switch to cease the iterative coupling (Paragraph 0032. If auto-negotiation is successful, use physical signals wires to establish link. Paragraph 0028. Auto-negotiation determines data rate.).

48. Cromer does not specifically teach of an optical transceiver coupled to the physical interface.

49. Manzardo teaches of optical transceiver connected to physical controller (fig. 7 #117 and #118, col. 8, lines 40-63).

50. It would have been obvious to one of ordinary in the art at the time the invention was made to combine the teachings to implement an optical transceiver coupled to the physical interface. The motivation for the suggested combination is that Manzaardo's teachings would enhance the capability of the switch by allowing the switch to communicate in different types of transmission media, wherein optical communication would provide high bandwidth and better quality over long distances.

51. As per claim 37, Cromer teaches substantially the invention as claimed including a media converter comprising:

a switch having a first end and a second end, the first end capable of coupling to any of a plurality of potential sources of a data signal, the second end coupled to an input port of a physical interface that converts the data signal from a signal that propagates along a first medium to a signal that propagates along a second medium (fig. 1; paragraph 0017. Switch implemented between devices. Medium 103 is one medium. It is inherent that switch is connected other mediums, e.g. medium between switch and gateway. Paragraph 0022. Physical layer. Encoding/modulation. Ports are inherent to receive and transmit signals to the wires.);

means for controlling the switch so as to couple the input port of the physical interface to one of the plurality of potential data sources actually carrying a data signal (Paragraph 0025; 0032. Re-route to set of wires. Re-route pin assignments. Switching between physical interface and wires is inherent to communicate data from the phy to assigned wires.);

wherein the physical interface detects a data rate of the data signal (Paragraph 0032. Detect success of auto-negotiation. Paragraph 0028. Auto-negotiation determines data rate.).

52. Cromer does not specifically teach of an optical transceiver coupled to the physical interface.

53. Manzardo teaches of optical transceiver connected to physical controller (fig. 7 #117 and #118, col. 8, lines 40-63).

54. It would have been obvious to one of ordinary in the art at the time the invention was made to combine the teachings to implement an optical transceiver coupled to the physical interface. The motivation for the suggested combination is that Manzaardo's teachings would enhance the capability of the switch by allowing the switch to communicate in different types of transmission media, wherein optical communication would provide high bandwidth and better quality over long distances.

55. As per claim 38, Cromer teaches substantially the invention as claimed including a media converter a network arrangement comprising:

a media converter including:

a switch having a first end and a second end, the first end capable of coupling to any of a plurality of potential sources of a data signal, the second end coupled to an input port of a physical interface that converts the data signal from a signal that propagates along a first medium to a signal that propagates along a second medium (fig. 1; paragraph 0017. Switch implemented between devices. Medium 103 is one medium. It is inherent that switch is connected other mediums, e.g. medium between switch and gateway. Paragraphs 0017; 0022. IEEE 802.3. Physical layer. Encoding/modulation. Ports are inherent to receive and transmit signals to the wires.);

means for controlling the switch so as to couple the input port of the physical interface to one of the plurality of potential data sources actually carrying a data signal (Paragraph 0025; 0032. Produce correspondence between pins. Re-route to set of wires. Re-route pin assignments. Switching between physical interface and wires is inherent to communicate data from the phy to assigned wires.);

wherein the physical interface detects a data rate of the data signal (Paragraph 0017. . Paragraph 0022. Physical layer. It is known that physical layer functions to receive and convert signals. Paragraph 0032. Detect success of auto-negotiation. Paragraph 0028. Auto-negotiation determines data rate.);

a first network device coupled via the first medium to the switch within the media converter (fig. 1. First device may be considered as device 102. It is also inherent that there are other devices connected to the switch.); and

a second network device coupled via the second medium to the transceiver within the media converter (fig. 1. First device may be considered as device 106. It is also inherent that there are other devices connected to the switch, e.g. devices on external network.).

56. Cromer does not specifically teach of an optical transceiver coupled to the physical interface.

57. Manzardo teaches of optical transceiver connected to physical controller (fig. 7 #117 and #118, col. 8, lines 40-63).

58. It would have been obvious to one of ordinary in the art at the time the invention was made to combine the teachings to implement an optical transceiver coupled to the physical interface. The motivation for the suggested combination is that Manzaardo's teachings would enhance the capability of the switch by allowing the switch to communicate in different types of transmission media, wherein optical communication would provide high bandwidth and better quality over long distances.

59. As per claim 28, Cromer teaches the media converter of claim 27, wherein the logic device is further arranged to:

receive a signal from the physical interface, the signal communicating that a period during which the data signal will be at least partially absent is ensuing (Paragraph 0031. Receive signals for auto-negotiation, which includes timeout);

wait for the period during which the data signal will be at least partially absent to expire
(Paragraph 0031-0032. Wait for timeout or end of auto-negotiation.);

receive a signal from the physical interface, the signal communicating a data rate at which the data signal will be communicated (Paragraph 0032. Detect end of auto-negotiation is successful.
Paragraph 0028. Auto-negotiation determines data rate.); and

upon reception of the signal communicating the data rate at which the data signal will be communicated, instruct the switch to cease the iterative coupling (Paragraphs 0025; 0032. Produce correspondence between pins. Paragraph 0032. If auto-negotiation is successful, use physical signals wires to establish link.).

60. As per claim 29, Cromer teaches the media converter of claim 28, wherein the period during which the data signal will be at least partially absent to comprises an autonegotiation period (Paragraph 0031-0032. Auto-negotiation.).

61. As per claim 30, Cromer teaches the media converter of claim 27, wherein the logic device is a microprocessor (Paragraph 0021. Processor within a single chip. DSP or RISC.).

62. As per claim 31, Cromer teaches the media converter of claim 27, wherein the logic device is an application specific integrated circuit (Paragraph 0021. Processor within a single chip. DSP or RISC.).

63. As per claims 32 and 42, Cromer teaches the invention of claims 27 and 38, wherein the first medium comprises a metallic conduction path (Paragraph 0024. RJ 45 connector.).

64. As per claims 33 and 43, Cromer does not specifically teach that the invention of claims 27 and 38, wherein the second medium comprises an optical fiber.

65. Manzardo teaches of using optical fiber as a medium for communication (col. 8, lines 56-63).

66. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the switch to be interfaced to a medium comprising an optical fiber, which would allow support for high bandwidth and allow communication over a longer distance with low interference.

67. As per claims 34 and 44, Cromer does not specifically teach the invention of claims 27 and 38, wherein the first medium comprises an optical fiber.

68. Manzardo teaches of using optical fiber as a medium for communication (col. 8, lines 56-63).

69. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the switch to be interfaced to a medium comprising an optical fiber, which would allow support for high bandwidth and allow communication over a longer distance with low interference.

70. As per claims 35 and 45, Cromer does specifically teach that the invention of claims 27 and 38, wherein the second medium comprises a metallic conduction path.

However, Cromer teaches of one of switch's interface connecting to a medium comprising a metallic conduction path (Paragraph 0017; 0024), and it would have been obvious to one of ordinary skill in the art for one of the switch's other interface to connect to a metallic conduction path such as via the RJ-45 connector, which would reduce cost operations.

71. As per claims 39-40, Cromer teaches that a first network device may include different types of network devices (Paragraph 0016) but does not specifically teach that the first network device comprises a switch or a hub.

Nonetheless, a switch or a hub are well known devices in a network, and it would have been obvious to one of ordinary skill in the art to connect a switch or a hub to the switch to increase a network's ability to communicate data.

72. As per claim 41, Cromer teaches the network arrangement of claim 38, wherein the first network device comprises a workstation (Paragraph 0016. Network computer.).

73. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cromer and Manzardo, in view of Cam et al. US Patent #6,671,758 (Cam hereinafter).

74. As per claim 36, Cromer does not specifically teach the media converter of claim 27, wherein the signal communicating a data rate at which the data signal will be communicated is a two-bit digital signal derived from a tri-state signal provided by the physical interface.

76. Cam teaches a system for packet data transfer, wherein PHY device communicates a two-bit signal derived from a tri-state signal (Table 2. See RMOD. PHY to Link.).

77. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings for the PHY device to communicate a two-bit signal derived from a tri-state signal, which would allow communicating control signals adapted for different data paths.

Conclusion

78. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

79. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

80. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

81. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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